

The title of the Conference is: The Future of Cosmology with Large-Scale Surveys

The title of my talk is: Concerning the development of the wide-field optics for WFXT including methods of optimizing X-ray optical prescriptions for wide-field applications

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The Abstract (which you will need to get cleared) is:

We present a progress report on the various endeavors we are undertaking at MSFC in support of the Wide Field X-Ray Telescope development. In particular we discuss assembly and alignment techniques, in-situ polishing corrections, and the results of our efforts to optimize mirror prescriptions including polynomial coefficients, relative shell displacements, detector placements and tilts. This optimization does not require a blind search through the multi-dimensional parameter space. Under the assumption that the parameters are small enough so that second order expansions are valid, we show that the performance at the detector can be expressed as a quadratic function with numerical coefficients derived from a ray trace through the underlying Wolter I optic. The optimal values for the parameters are found by solving the linear system of equations created by setting derivatives of this function with respect to each parameter to zero.